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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/591,560	06/09/2000	Emad N. Farag	2925-0326P	3532
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HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 8910 RESTON, VA 20195			EXAMINER CHANG, EDITH M	
			ART UNIT 2637	PAPER NUMBER

DATE MAILED: 10/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/591,560

Applicant(s)

FARAG ET AL.

Examiner

Edith M Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-11,13,15 and 16 is/are rejected.
- 7) ☒ Claim(s) 2,3,12 and 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on July 31 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed August 10, 2004, have been fully considered but they are not persuasive.

Applicants argue that the reference does not teach a method for detecting a multipath component of packet data comprising: searching for a multipath component during an inactive period of a data transmission, including defining a dynamic acquisition search window having a time width which increases in proportion to a time duration of the inactive period.

The reference LeBlanc et al. teaches all limitations recited in the claims, the teachings are shown in FIG.1-3, FIG.36-37, Abstract, and lines 3-7 on page 26.

First, "detecting/identifying multipath components during an active period of data transmission", in FIG.1-FIG.3 and FIG. 36-FIG.37, the mobile 140 is the receiver receiving the packet from the base station/MS (element 122 and 112) in the wireless environment/network during an active period of data transmission from the base station.

Second, "searching for a multipath component during an inactive period of the data transmission", in page 26 lines 3-7, where the mobile capturing all relevant pilots is searching during a period that is no data/packet transmitted (inactive period).

Third, "an acquisition window having a time width which increases in proportion to a time duration of the inactive period", in page 26 lines 4-7, wherein the mobile extends its search range (an acquisition window of capturing the pilot signals, the multipath components) in proportion to a time duration of the inactive period in which the time

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duration all pilots are in the process of capturing, the mobile increases the window till capturing the pilots and being ready to complete/receive the message/data, while the receiver's location is going to be determined and the data/packet is not available as stated and taught in the reference.

Therefore, the reference teaches the invention recited in the claims.

Drawings

2. The drawings are objected to because figure 6 lacks the x axis and its unit to indicate the invention. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claim 1-12, 14 and 16 are objected to because of the following informalities:

Claim 1, line 3: "a receiver" is suggested changing to "the receiver".

Claim 2, line 2: "an inactive" is suggested changing to "the inactive".

Claim 4, line 2: "an active period" is suggested changing to "the active period".

Claim 5, line 2: "a receiver during an active" is suggested changing to "the receiver during the active".

Claim 10, line 7: "of acquisition" is suggested changing to "of the acquisition"; line 9: "a second" is suggested changing to "the second", "a width of" is suggested changing to "the width of"; line 11: "a second" is suggested changing to "the second", "across a" is suggested changing to "across the".

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Claim 11, line 1: "a second" is suggested changing to "the second".

Claim 12, line 2: "an inactive" is suggested changing to "the inactive".

Claim 14, lines 14-15: "size and k is a constant corresponding with a maximum rate of change of roundtrip propagation delay." is suggested changing to "size."

Claims 3, 6-9, and 16 are directly depends on the objected claim 1.

Appropriate corrections are required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 1, 4-6, 8, 10, 13 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by LeBlanc et al. (WO 9810538).

Regarding **claims 1, 10, & 13**, LeBlanc et al. discloses a method for detecting/acquiring multipath component of packet data (68 FIG.1, Abstract, page 10 lines 7-11, where the internet provides the packet via wireless environment, FIG.1-3 where the mobile 140 in the wireless environment, which provides multipath components), comprising: identifying multipath components received by a receiver during an active period of data transmission (page 26 lines 3-4, where establishing the search window size, the standard search window, that the mobile station use performs during an active period of data transmission); and searching for a multipath component

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during an inactive period of the data transmission (page 26 lines 6-7, where capturing all relevant pilots is searching during an inactive period), including defining a dynamic acquisition search window having a time width which increases in proportion to a time duration of the inactive period upon losing of the first packet, searching for a second packet until it being detected (page 26 lines 4-7, where the dynamic search window size increases/extends in proportion to a time duration of the inactive period that is the search range in which a time duration pilots can not be captured, extends the search range until capture the pilots as the receivers move).

Regarding **claims 4 & 5**, inheres the limitations of claim 1, LeBlanc et al. discloses searching multipath components using a rake finger in a rake receiver (page 25 lines 15-16, where the rake finger in a rake receiver which is the 140 mobile), having the greatest power amongst the rake fingers (Fig. 26) until no multipath components are received.

Regarding **claims 6 & 8**, LeBlanc et al. discloses a transmitter/receiver (where receiver is a mobile) that moves relative to the receiver/transmitter during one or both of the active period and the inactive period (FIG. 3 140 is the mobile, page 26 lines 3-19).

Regarding **claim 16**, LeBlanc et al. discloses the dynamic acquisition search window has an initial start point that varies as a function of time and an initial end point that varies as function of time (page 26 lines 3-19, where extending the search range as function of time/chips).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over LeBlanc et al. (WO 9810538) as applied to claims 6 and 8 above, and further in view of Bloebaum (US Patent 6188351 B1).

Regarding **claims 7 & 9**, Further Bloebaum teaches the width of the dynamic acquisition search window is increased in correspondence with an expected maximum speed of the mobile terminal (column 3 lines 54-column 4 line 5, Fig.2b & Fig.3) wherein the search window increased in correspondence with the expected maximum speed of the mobile terminal u. As LeBlanc et al.'s mobile location system to locate the handset s or mobile stations, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to have the Bloebaum's teaching in LeBlanc et al's acquisition search window to reduce the code shift searching/code acquisition.

8. Claims 11 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over LeBlanc et al. (WO 9810538) as applied to claims 10 and 13 above, and further in view of McGuffin (US 4217586).

Regarding **claims 11 & 15**, further McGuffin teaches the method comparing a detected signal with a reference signal (11-22 FIG.1); determining a value corresponding to the comparison of the detected signal and the reference signal (out put of 22 FIG.1);

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repeatedly shifting the detected signal incrementally relative to the reference signal (46-50 g_{1...L} * FIG.1, FIG.3), comparing the relatively shifted detected signal and reference signal (42-22 FIG.1), and determining a value corresponding to the comparison of the detected signal and the reference signal (22 FIG.1), thereby obtaining a plurality of values corresponding to the comparisons between the detected signal and the reference signal (out put 22 , 46-50 FIG.1; inputs 82&56 FIG.3); identifying the highest value among the plurality of values corresponding to the comparisons between the detected signal and the reference signal (inputs 82 FIG.3, FIG.6); and comparing the highest value to a threshold value (80 FIG.3), such that exceeding the threshold value corresponds with identification of the received packet data multipath component. As LeBlanc et al.'s receiver using dynamic acquisition window to search, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to have the searching steps stated/taught by McGuffin in LeBlanc et al's receiver to have the details of the searching steps and to achieve sufficient signal acquisition and reliable, uninterrupted operation of a spread spectrum communication system (column 1 lines 13-35).

Allowable Subject Matter

9. Claims 2-3, 12, and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
10. The following is a statement of reasons for the indication of allowable subject matter:

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The prior art of record does not teach or suggest, alone or in a combination, among other things, at least a method for detecting a multipath component at receiver as a whole, the combination of elements and features as claimed, which includes the search window having a start point as a function of time W_s and an end point as a function of time W_E wherein the $W_s=0$ when the initial start $W_{0S} \leq \text{a constant} * \text{time}$ and $W_E = \text{an arbitrarily selected upper limit WIN_SRCH_MAX when the initial end } W_{0E} \geq \text{WIN_SRCH_MAX} - (\text{a constant} * \text{time})$.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

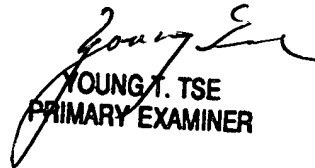
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edith M Chang whose telephone number is 571-272-3041. The examiner can normally be reached on M-F.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jayanti Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Edith Chang
October 15, 2004


YOUNG T. TSE
PRIMARY EXAMINER